Dr Coxe

to Poole

Croup

sufficiently correct — principally the same as the lectures on

Passed March 1824

W. & H.

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An
Inaugural Essay
On Croup
Respectfully dedicated
To
The Professors of the University
of
Pennsylvania
by
William Cox Poole
of
Philadelphia

In compliance with the Laws of this University, requiring an Essay (upon some medical subject) of the Candidate for a degree; I offer this frail production, conscious of my inability to produce anything extraordinary; nor can it be expected when the limited time allotted for acquiring a medical education is taken into consideration. Presuming however upon your knowledge of these privations, I flatter myself that it will be received by you as a memorial of that experience which I have derived from an attendance on your invaluable lectures...

An Inaugural Dissertation

In the numerous catalogue of destructive diseases to which mankind in the infantile state are liable, no one is more formidable when left to itself or more timidly treated, than the one now under consideration.

It is moreover so insidious in its approach, so rapid and alarming in its progress, and above all so frequently fatal in its termination, that it sometimes proves destructive before there is any suspicion of its character, and is often when discovered beyond the reach of medical assistance.

This disease which may be defined (at its commencement) to consist of a difficulty of respiration with a peculiar shrill noise in inspiration, without much appearance of swelling about the fauces and throat, is designated by a variety of appellations given to it by different writers, according to the idea they entertained respecting the cause, nature or seat of the disease.

Dr Cullen (by whom it was considered as an inflammatory affection of the trachea) has called it Cynanche

Trachialis; it has also been designated under the titles of Angina Polyposa, Suffocatio Stridula, Acute Asthma, Peripneumonia Trachialis, Tracheitis &c.

It is known amongst the vulgar in Scotland by the title of Croup, Choack or Stuffing in Ireland, and Hives or Heaves in this country.

Of these Tracheitis is the most proper, as it designates more particularly the seat of the disease and its nature, at the same time gives uniformity to medical nomenclature and corresponds with Pleuritis, Gastritis, and all the other terms which are applied to inflammatory affections.

Croup is commonly considered as a disease of modern origin and the credit of having originally noticed and described it has always been concedeed to Dr Home of Edinburgh.

But Professor Chapman observes in his lectures on the practice of medicine, "in turning over the leaves of an old volume of the transactions of the Royal Society of London, I find a case well authenticated by dissections; the writer

continues he" who was an obscure practitioner describes it as a new disease appearing in Cornwal and proving particularly fatal to children. There are other proofs however of the disease being of a more ancient date. Though it may have existed long before that period, I believe the first regular history of the complaint, was published by Martin Ghisi an Italian writer about the year 1749. In 1764 a graduate at Upsal published an account of two cases, and about the same period a paper appeared on this subject from the pen of Dr Berger, which was a year prior to the publication of Dr Homes Essay.

I mention these facts as they stand upon record, with a view of exposing the fallacy of the opinion that the disease is a new one, and I will even venture to assert, that by refering to the writings of Hippocrates we may there find some traces of a similar disease.

But it may be enquired why a disease as old as the time of Hippocrates was never accurately described untill the middle of the 18 century. To this I would answer;

that there are several circumstances, which when jointly considered, are sufficient, adequate to account for a disease of this character, remaining so long in obscurity.

The first of these I shall mention is the age of the patient, from which in a majority of instances no information could be obtained, respecting the nature or seat of the complaint.

2nd The liability there is in all infantile complaints of a similar nature to be confounded.

The same difficulty might also arise in after life, were it not for some circumstances best detailed by the patient himself.

What enables us I would ask, to designate between inflammation of the intestines and peritonitis, but a knowledge of the circumstances attendant on both.

Each is alike attended with an acute pain in the abdomen, increased by pressure, a hot skin, furred tongue, great prostration of strength, and a small quick cordes pulse.

But in Enteritis there is often a frequent desire to go to stool, accompanied with tormina and tenesmus,

and an abatement of pain after each motion, while in Peritonitis no such tendency exists; there the bowels are obstinately constipated or in a natural condition, without any desire to go to stool or any apparent relief by so doing.

Such circumstances impartially considered, it will I think be admitted that the disease in question might very readily have been confounded with some of the other forms of Cynanche, or several other diseases as Asthma Infantinum &c.

3d. By the indidious manner in which it frequently advances often commencing like a common cold; its sophisticate progress when fully formed, and above all its frequent speedy termination in death, that oftentimes the physician was not called soon enough to make any just observation on the disease.

The circumstance however which had the greatest weight in retarding the discovery of the nature of this disease, was the aversion which then existed on the part of the physician, as well as the publick to the examination of bodies after death, and to their ignorance of the appearance of the parts in a healthy state.

But fortunately for the cause of mankind, that dark period of ignorance and superstition has passed away, and a new era in medical science and a longer and more rational system of death take place; and physicians have at length arrived at the correct pathology and practice of the disease in question; as well as many others which could only be obtained by such investigations.

This disease is in general confined to the early periods of life, most usually making its attack between the first and second years, though it sometimes occurs in children within the month, or in persons who have arrived at the age of puberty. I am informed that the late Dr. Adam Rutherford of this city used to mention a case in his lectures of a person upwards of 40 years of age who was attacked with it; cases of a similar nature are mentioned by Dr. Jeffer Chapman; and it is a fact I believe now sufficiently established, that the illustrious founder of our profession fell a victim to this disease.

The remote causes of this disease are generally divided into predisposing and exciting; of the former very little is

satisfactorily understood: they have been referred to a certain period of life, viz. Infancy, together with a rigid and robust habit of body.

Of the latter or exciting, may be enumerated, a damp or moist atmosphere, exposure to cold, and in fact all the vicissitudes of a variable climate. It occurs, most frequently, in the winter and spring, when the weather is variable, and therefore we may infer that cold and moisture have some influence in inducing it, though no medical gentleman considers it as contagious; it is stated to have prevailed perennially, upon very respectable authority.

It has been observed to be most prevalent near the sea where the atmosphere is loaded with moisture though it also occurs in inland situations.

It is a singular fact though well authenticated, that it is endemical to particular situations. It is stated that at Edinburgh the capital of Scotland, it is of rare occurrence; while at Leith, which is the seaport of Edinburgh its ravages are very alarming.

The same peculiarity has been observed to exist between

Baltimore and Fells point, while the former is comparatively free from the disease, in the latter which is immediately in its vicinity, it is remarkably prevalent.

Some families are much more liable to this disease than others, and when a child is once attacked, it is very apt to have a return of the same complaint on exposure to cold.

Croup has been divided by some writers into spasmodic, and inflammatory or tumoral, but as I consider the division of no practical importance, I shall here omit it altogether.

In some instances the disease comes on suddenly, and in those cases it is evidently spasmodic. I have seen used to relate to the medical class; the case of a young woman in whom the disease advanced so rapidly that in a very short time she was affected in extreme mortis from asphyxia. Tracheotomy was proposed, the instant an incision was made by the knife she seemed to recover; hence he concluded it must have been spasmodic in that case. The irritation of the knife resolving the spasm, it could not have been by depletion as the loss of blood

cause lighting. In other cases it advances with less rapidity, assuming at its commencement all the appearances of a common cold and is thus allowed to proceed unmolested to a considerable height before its nature is discovered: and, in those cases its inflammatory character is not to be denied.

The following accurate history of the symptoms is given by Dr Cullen. "It very commonly comes on with the ordinary symptoms of catarrh, but sometimes peculiar symptoms of the disease show themselves from the very first. These are a hoarseness, with some difficulty and ringing sound, both in speaking and coughing, as if the noise came from a brazen tube: at the same time, there is a sense of pain about the larynx, some difficulty of respiration, with a whizzing sound in inspiration, as if the passage of the air were straitened.

The cough which attends it is commonly dry; and if anything be spitten, it is a matter of a purulent appearance, and sometimes films resembling portions of a membrane. Together with these symptoms, there is a frequency of the pulse, a restlessness, and an uneasy sense of heat.

When the internal fauces are viewed, they are sometimes

without any appearance of inflammation but frequently a redness and even swelling of the eyes and sometimes in the fauces there is an appearance of a matter like to that rejected by coughing. With the symptoms now described, are particularly with great difficulty of breathing, and a sense of strangling in fauces, the patient is suddenly taken off."

The appearances on dissection are very various, according to the length of time the disease existed, before death took place.

When the attack comes on suddenly, and the patient falls a victim in the commencement of the disease, owing to the violence of the spasmodic action, or is suffocated by the collection of mucus in the trachea, the appearances differ but little from the healthy structure. But when the disease has advanced less rapidly in the commencement and runs through its different stages regularly, the morbid appearances are very considerable.

In those instances the upper part of the trachea is most usually the seat of inflammation, though sometimes it extends to the minute ramifications of the bronchia, and even into the very structure of the lungs. Adhesions are frequently observed between the lungs and pleura; sometimes the

lungs have been found filled with dark colored blood, and in a few instances it is said, pus has been detected.

Not a little has been written respecting a peculiar membrane which forms in the trachea; and produces death by impeding respiration. That such a membrane does sometimes exist I am by no means inclined to deny, but I do believe that it is much less frequent in its occurrence, than physicians generally suppose. In fact I am very much inclined to believe that many have mistaken a quantity of contracted mucus or coagulable lymph, for a delicately organized membrane.

In the treatment of this disease, I am compelled to acknowledge that I have no new original to offer; but even this, does not occasion much regret, because it is successfully treated when attacked in the commencement by the mode of management already adopted, that even if I had any thing new to offer it might be deemed, wholly superfluous.

After such a confession it might reasonably be expected that I should offer some kind of an apology for selecting a subject to which I could add no improvements of my own. But on this head I can only reply that as an Essay

when some medical subject was absolutely necessary, I could expect to receive the honours of this institution; I have chosen this for want of a better.

The indications of cure are,

1st. to relieve the most distressing symptoms,

2nd to endeavour to mend the progress of the disease,

3rd to prevent its return.

As the leading indication in the commencement is to relieve the most formidable symptoms, we shall first consider that part of our subject.

Called to a child in the early stage of the disease, where the respiration is difficult and laborious with the cough & croak, the first object should be to endeavour to excite vomiting. To meet this indication a variety of Emetic substances have been recommended as Ipecacuanha, Squills, Seneka &c

As the disease is often spasmodic in its commencement, we might suppose these would answer well. Notwithstanding the plausability of such an opinion, experience has proved the Emetic Tartar to be much better adapted to

this complaint. It being is said, as well as inodorous; the minuteness of the dose, and above all the promptness with which it operates, all conspire to recommend it strongly to our attention. I ought here to observe that owing to the great torpidity of the system in this complaint, the dose of every article exhibited should be proportionally large.

Several ways of administering the Emetic Tartar have been recommended; and perhaps the best is in the form of watery solution or in wine, though the latter has been objected to on account of its stimulating nature.

If after this article has been freely given the desired effect is not fully produced, its operation should be assisted by the warm bath. When this also fails and the child is robust, a vein in the arm or neck should be opened, and blood freely detracted. I am inclined to think that bleeding from the jugular vein is most convenient and desirable, both from its being in the vicinity of the disease, and in emergent cases where much blood is required in a short time: and as is often the case in fat children it is difficult to perceive the vein in the arm. After which the Emetic & warm bath are to be repeated.

But should the attack resist all these measures, it has been strongly recommended to bleed the patient ad deliquium animi.

This practice however I believe is not often necessary, the Emetic the warm bath and a moderate bleeding have generally proved effectual in all the cases I have seen.

But of its efficacy in very obstinate cases there can be no doubt. Indeed it is stated by the most respectable authority that bleeding when pushed to this extent is always effectual and that as soon as syncope is induced, all the bad symptoms vanish, and the little sufferer is immediately relieved.

After the force of the disease is thus broken by the more powerful remedies, we resort to the administration of Cathartics.

Of these by far the most effectual is Calomel. It possesses all those characteristics as a cathartic, that the Tartarized Antimony does as an Emetic, and is therefore equally well adapted to the cases of children. It should be given in large doses and frequently repeated, in order to arouse the latent energies of the system. Exhibited in this manner it has a two fold operation besides its action on the stomach and intestinal canal which is that of exciting free discharges by stool, it operates also

as an expectorant, relieving the cough, difficulty of respiration, and distress of the chest.

The practice of employing Calomel in this disease was introduced by Dr Adam Kirkes of this City, who gave it in the manner after Bloodletting and Emetics, though the credit of having first employed it, is ascribed to Dr Hamilton, professor of Midwifery at Edinburgh; who it is asserted depends exclusively upon it in doses of from 1 to 5 grains every hour according to the age of the patient; after using the warm bath gradually discontinuing it as the breathing is relieved.

It is stated by him, that in no case in which he employed it before the appearance of the viridness of the lips, an other mode of treatment has he failed in curing the disease.

However effectual this practice may be in Scotland, it is not adequate to overcome that gigantic form of the disease which prevails in our country.

As soon as we have the disease thus completely within our power, we may call to the aid of expectorants, since it is in this stage of the complaint that the Ipecacuanha has been so highly spoken of; notwithstanding this most,

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is so greatly extolled in the commencement of Croup, by Dr Archer of Maryland I decidedly prefer the Emetic Tartar.

It is here that a combination of the two preceding articles in the form of Dr Cox's Wine Syrup are an invaluable auxiliary in the treatment of this disease, and are particularly well adapted to the stage we have just been considering.

It must however be recollected that the practice of which I have been speaking, is only adapted to the early or forming stage of the complaint. When the disease has been allowed to proceed unmolested for some hours, the case becomes somewhat different. By this time the inflammation has extended itself, into the cellular texture of the lungs (as is proved by the dissections of Dr Cheyne and Bretlie) & what perhaps is more common the lungs are engorged with blood, the disease assuming at this juncture the character of Pneumonia Notha.

In the early stage of the disease the voice and cough are shrill, resembling barking, the child is very restless and uneasy, without appearing to suffer any particular pain.

In the advanced stage, the eyes are prominent and inflamed and respiration becomes more stridulous and is at last performed with great difficulty; the pulse is generally full and tense though if the child be sinking it is week feeble and irregular.

The indications here are to relieve the lungs and for this purpose the child should be placed in a warm bath and a powerful emetic exhibited. In this instance the sulphate of Zinc has been strongly recommended, but I can see no reason for preferring it to the Emetic Tartar.

Should this not succeed in releaving the obnoxious state of the lungs a vein should be opened and a sufficient quantity of blood detracted if the pulse will admit.

The pulse is sometimes in an obscured state, hence it may be mistaken for weakness; when the patient is bled in this condition the pulse will develop itself while the blood is flowing. If the system reacts it may be repeated, untill a sufficient quantity has been withdrawn. Should this prove ineffectual a Blister may be applied to the Chest, but if the case be of too urgent

a nature to wait for the tardy operation of a Blister, we ought to endeavour to excite vesication by cloths wrung out of hot water and applied to the chest; or we may rub the part with a decoction of Cantharides with Oleum Tere-binthinae.

As soon as the circulation is relieved and equalized, we may resort to the use of expectorants. Even in this stage of the complaint, much may be expected from the liberal use of Calomel. This followed by the liberal use of the de-coction of Seneka, the Syrup or Oxymel of Squills will often prove exceedingly beneficial.

To fulfull the third indication or to prevent a relapse of the disease the patient should carefully guard a-gainst the vicissitudes of weather and exposure to cold by wearing warm clothing, and flannel next the skin. He should live in a dry pleasant atmosphere, and if much debilitated, tonics and a generous diet should be used.

I cannot conclude this Essay without offering to the medical professors in this University, my warmest and unfeigned acknowledgements, for the many advantages

I have derived from an attendance on their lectures.

That they may all continue to enjoy that reputation which they now possess as publick teachers and private individuals is my most sincere wish.